

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

- 1) (previously presented) A combiner, comprising:
 - a common port;
 - a plurality of cavity resonators;
 - a plurality of apertures;
 - a combining mechanism operably connected to said common port and coupled to said plurality of cavity resonators through said apertures; and
 - at least one edge pair of cavity resonators,wherein said outputs of said edge pair of resonators are operably connected to said common port through half-wave transmission lines.

- 2) (original) The combiner according to claim 1, wherein said combining mechanism comprises:
 - at least one junction to combine signals from at least one pair of said cavity resonators,wherein said at least one junction is operably connected to said common port; and
 - a transmission line operably connected between each of said apertures and said junction,wherein a line length of said transmission line is equal to or less than a quarter-wavelength.

3) (previously presented) A combiner, comprising:

a common port;

a plurality of cavity resonators;

a plurality of apertures;

a combining mechanism operably connected to said common port and coupled to said plurality of cavity resonators through said apertures, wherein said plurality of cavity resonators comprises:

at least one edge pair of cavity resonators; and

a central pair of cavity resonators, wherein said outputs of said edge pair of resonators are operably connected to said common port through half-wave transmission lines and said center pair of resonators is operably connected to said central junction.

4) (original) The combiner according to claim 1, further comprising:

at least one sliding cover located over at least one of said apertures;

at least one free-rotating screw operably connected to said sliding cover, whereby said aperture is adjusted by moving said sliding cover; and

at least one locking screw, wherein said sliding cover is secured over said aperture by said locking screw.

5) (original) The combiner according to claim 2, wherein said combining mechanism is coupled to said plurality of cavity resonators through a distance between 0.06 to 0.15 inches.

6) (previously presented) The combiner according to claim 2, wherein said transmission line is a strip.

7) (original) The combiner according to claim 2, wherein said cavity resonators are ceramic.

8) (original) The combiner according to claim 2, further comprising a balancing capacitor operably connected to said at least one junction to cancel phase imbalance.

9) (original) The combiner according to claim 2, further comprising:
at least one sliding cover located over at least one of said apertures;
at least one free-rotating screw operably connected to said sliding cover, whereby said aperture is adjusted by turning said screw, whereby said sliding cover is moved; and
at least one locking screw, wherein said sliding cover is secured over said aperture by said locking screw.

10) (original) The combiner according to claim 3, wherein said combining mechanism comprises:

at least one junction to combine signals from said edge pair of cavity resonators, wherein said at least one junction is operably connected to said common port through said half-wave transmission lines; and

a transmission line operably connected between each of said apertures and said junction, wherein a line length of said transmission line is equal to or less than a quarter-wavelength.

11) (original) The combiner according to claim 10, further comprising:

at least one sliding cover located over at least one of said apertures;

at least one free-rotating screw operably connected to said sliding cover, whereby said aperture is adjusted by turning said screw, whereby said sliding cover is moved; and

at least one locking screw, wherein said sliding cover is secured over said aperture by said locking screw.

12) (original) The combiner according to claim 10, wherein said combining mechanism is coupled to said plurality of cavity resonators through a distance between 0.06 to 0.15 inches.

13) (previously presented) The combiner according to claim 10, wherein said transmission line is a strip.

14) (original) The combiner according to claim 10, wherein said cavity resonators are ceramic.

15) (original) The combiner according to claim 10, further comprising a balancing capacitor operably connected to said at least one junction to cancel phase imbalance.

16) (original) The combiner according to claim 11, wherein said combining mechanism is coupled to said plurality of cavity resonators through a distance between 0.06 to 0.15 inches.

17) (previously presented) The combiner according to claim 11, wherein said transmission line is a strip.

18) (original) The combiner according to claim 11, wherein said cavity resonators are ceramic.

19) (original) The combiner according to claim 11, further comprising a balancing capacitor operably connected to said at least one junction to cancel phase imbalance.

20) (canceled)

21) (currently amended) ~~The method according to claim 20,~~ A method of combining a plurality of signals, comprising the steps of:

coupling said signals through apertures;

combining said signals into pairs of signals using equal to or less than quarter-wavelength transmission line; and

further comprising the step of:

combining said pairs of signals using half-wavelength transmission lines.

22) (currently amended) ~~The method according to claim 20,~~ A method of combining a plurality of signals, comprising the steps of:
coupling said signals through apertures; and
combining said signals into pairs of signals using equal to or less than quarter-wavelength transmission lines,

wherein said step of coupling said signals, comprises adjusting said coupling by:
rotating a screw;
adjusting a sliding cover; and
securing said sliding cover.

23) (original) The method according to claim 21, wherein said step of coupling said signals, comprises adjusting said coupling by:

rotating a screw;
adjusting a sliding cover; and
securing said sliding cover.

24. (previously presented) A combiner, comprising:

a housing;
a cable connector disposed on a side of said housing;

at least two adjacent cavities, said cavities enclosed in said housing and separated from each other by a cavity wall;

at least two cavity resonators, each of said cavities having at least one cavity resonator disposed therein;

a plurality of apertures, each of said cavities having at least one aperture formed in a side of said housing, said side being the same side on which said cable connector is disposed.

a combining mechanism connected to said cable connector and coupled to said cavity resonators through said apertures; and

wherein said resonators are connected to said cable connector through half-wave transmission lines.

25. (previously presented) A method of combining a plurality of signals using a combiner having a housing enclosing at least two cavity resonators in separate and adjacent cavities, said housing having a cable connector disposed on and at least two apertures formed in a side wall of said housing, wherein each of said cavity resonators has a corresponding aperture, and said connector connects to each of said resonators through said apertures via a conductor, said method comprising:

coupling signals carried on said conductor through said apertures; and

combining said signals into signal pairs using transmission lines of length equal to or less than a quarter-wavelength.